AN EXPERT SYSTEM FOR COMPUTER (HARDWARE) DIAGNOSIS

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ABSTRACT

This thesis discusses the key issues of development of an Expert System (ES) proposed for diagnosing the computer's hardware failure. This system used web-based environment for the computer's hardware self-assesment diagnosing so that its easier for the users to access at any convenient time. The basic development of the system is based on the concept of Engineering Knowledge Based Expert System approach. This knowledge based approach, is used to generate facts by using a set of rules to retrieve a solution. It will choose parts of the symptoms by referring to other relevant symptoms by using rule-based reasoning. The main activities in developing the system include the knowledge acquisition, knowledge validation, knowledge representation, inference and explanation. The system is independent as and instant expert help for any computer users to repair their own computer quickly.

Keywords: expert system, computer's hardware fault, computer (hardware) diagnosis, engineering knowledge based system, rule-base reasoning.

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INTRODUCTION

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Computer failure is a common occurrence, especially in the heavy usage environment. Failure or downtime increase cost directly or indirectly. Sending the computer for repairs or calling for expert is a hassle and time consuming. Expert help is needed if any users to repair their own computers.

However most of the system developed for fault diagnosis, system configuration and performance tuning program for computer system nowadays developed for industrial or by manufacturer only that not widely used and are based on mathematical models and implemented using languages that are suitable for numerical computation only. For sophisticated approaches to system configuration and diagnosis, development of methodologies and technique are needed to incorporate practical knowledge of planning engineers and numerical analysis program into the system.

For efficient system configuration, a good performance tuning, and a good fault diagnosis, there is clearly a need to develop a new computer techniques and methods to build programs in which the precious knowledge of experienced operation engineers can be accumulated and used. This enters some short of an Expert System approach detect. Systems which enable expert instructions be used to diagnose failure without the presence of the expert him in self.

The primary goal of this system is to make expertise available to decision makers, technicians or users who need answers quickly. The knowledge gathered from the expert is used by the system and structured in certain logical manner so that users could easily use it to solve his hardware problems easily.